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| EXAMINER | | | | |
| SAFAVI, MICHAEL | | | | |
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| 3637 | | | | |
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary**Application No.**

10/625,102

Applicant(s)

BUARQUE DE MACEDO, PEDRO M.

Examiner

Michael Safavi

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 13 March 2008.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1.5, 13, 14, 23, 27, 29-31, 37, 42-47, 51-59 and 63-66 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1.5, 13, 14, 23, 27, 29-31, 37, 42-47, 51-59 and 63-66 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____

In view of the Brief on Appeal filed on March 13, 2008, PROSECUTION IS
HEREBY REOPENED. A new ground of rejection is set forth below.

To avoid abandonment of the application, appellant must exercise one of the
following two options:

(1) file a reply under 37 CFR 1.111 (if this Office action is non-final) or a reply
under 37 CFR 1.113 (if this Office action is final); or,

(2) initiate a new appeal by filing a notice of appeal under 37 CFR 41.31 followed
by an appeal brief under 37 CFR 41.37. The previously paid notice of appeal fee and
appeal brief fee can be applied to the new appeal. If, however, the appeal fees set forth
in 37 CFR 41.20 have been increased since they were previously paid, then appellant
must pay the difference between the increased fees and the amount previously paid.

A Supervisory Patent Examiner (SPE) has approved of reopening prosecution by
signing below:

/Lanna Mai/
SPE of Art Unit 3637

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that
form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(a) the invention was known or used by others in this country, or patented or described in a printed
publication in this or a foreign country, before the invention thereof by the applicant for a patent.

(b) the invention was patented or described in a printed publication in this or a foreign country or in public
use or on sale in this country, more than one year prior to the date of application for patent in the United
States.

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(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 1, 5, and 13 are rejected under 35 U.S.C. 102(b) as being anticipated

by MacKenzie '851. MacKenzie discloses a structural foam glass module, col. 7, lines 31-33, to which a prestress compression of greater than 5,000 psi is applied, col. col. 6, lines 17-23. The foam glass module possesses a tensile strength of at least 6,000 psi.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1, 5, 13, and 42-52 are rejected under 35 U.S.C. 103(a) as being unpatentable over MacKenzie '851.

The module of MacKenzie is disclosed as able to withstand at least 10,000 psi of compression. However, in view of the MacKenzie disclosure to tensile strength as well as the force necessarily applied to the MacKenzie foam block within the press mold, it would have been obvious to have formed the MacKenzie block so as to possess a

compression strength of at least 10,000 psi, (see col. 6, lines 41-45). Further, To have formed the MacKenzie foam glass module with any particular pore size, thus allowing for yielding of the desired high compressive strengths, would have been obvious to one having ordinary skill in the art at the time the invention was made particularly, in view of MacKenzie's disclosure at col. 6, lines 1-3.

Claims 1, 5, 13, 14, 23, 27, 29-31, 37, 42-47, 51-59 and 63-66 are rejected under 35 U.S.C. 103(a) as being unpatentable over Grady, II (U.S. Patent No. 4,324,037) in view of either Zeinetz (U.S. Patent No. 3,292,316) or Lagendijk (U.S. Patent No. 4,450,656) when considering either of Williams et al. (U.S. Patent No. 4,124,365) or Blaha (U.S. Patent No. 3,056,184) and further considering any of Jones et al. (U.S. Patent No. 3,459,565), Elmer et al. (U.S. Patent No. 3,592,619) and Ford (U.S. Patent No. 2,758,937).

Grady, II discloses, Figs. 7 and 8, an arrangement, (column), of tile units 82 held together as by tension bolts 90. At least one tile is placed between at least two metal beams 84 and held in compression by the tension bolts 90. Grady, II does not present the tiles 82 as made of a foamed glass.

However, each of Zeinetz and Lagendijk teach utilization of foamed glass tiles or blocks within a tensioned structural arrangement. Fig. 11 of Zeinetz, for example, shows tension bolts 36, 39 holding foamed glass tiles, col. 4, lines 5-9, in place while Figs. 1, 2, and 6 of Lagendijk shows tension members 33, 34, 36, 45, etc. outside of the

foamed glass units, holding the foamed glass units in place, col. 3, lines 30-60 and col. 4, lines 34-37.

And, each of Williams et al., as at col. 1, lines 35-43, and Blaha, as at col. 3, lines 24-35, teach utilization of foamed glass tiles or blocks possessing a compressive strength in excess of 1200 psi with Williams et al. teaching a compressive strength on the order of 5,000 to 8,000 psi with each of Williams et al. and Blaha disclosing use of the foam glass as a structural member sufficiently strong for structural purposes within the building industry, col. 1, lines 19-22 of Williams et al. and col. 1, lines 10-28 of Blaha.

Further, each of Jones et al., Elmer et al., and Ford disclose manufacture of foam glass components possessing various density including a density of from 20 to 60 pounds per cubic foot, with a pore size of less than 1mm including a pore size of from 0.1mm to 0.8mm or smaller, col. 5, lines 35-43, col. 7, line 51 and col. 8, lines 5-6 of Jones et al., col. 3, lines 20-29 and lines 65-67 of Elmer et al., and col. 1, lines 45-49 and lines 63-70 of Ford.

Therefore, to have provided the structural column of Grady, II with foamed glass tile units possessing a compressive strength of from 1,000 to 10,000 psi and a pore size of less than 1.0mm including a pore size of from 0.3mm to 0.7mm, in place of the clay or cement units, thus realizing the advantages of such foamed glass units within a structural arrangement, (including for example insulation properties), would have been obvious to one having ordinary skill in the art at the time the invention was made as taught by either of Zeinetz and Lagendijk when considering either of Williams et al. and

Blaha and further considering any of Jones et al., Elmer et al., and Ford, (**claims 1, 5, 14, 23, 27, 29, 31, 42-47, 51, 53-59, 63, and 65**). Applying a pre-compressive force of from 1,000 to 5,000 psi to the resulting assembled foam glass units, thus affording as much recovery from the effects of a greater degree of overload, would have constituted a further obvious expedient to one having ordinary skill in the art at the time the invention was made, (**claims 1, 5, 13, 23, 27, 42-47, 52, 54-59, and 63**).

As to **claims 13, 23 and 37**, to have placed the tension bolts 90 under a tension so as to prestress the foamed glass tile units of the resulting Grady, II assembly, thus forming a more strengthened arrangement, would have been obvious to one having ordinary skill in the art at the time the invention was made with Grady, II showing the tension members outside of the foam glass tile units.

As to **claims 23, 27 54-59, and 63**, the resulting Grady, II assembly discloses a prestressed assembly for use in buildings or other structures comprising: at least one prestressed foam glass tiles, having a prestressed compression of 1000 to 10,000 psi or greater; at least two metal beams 84; and one or more tension members 90, wherein said at least one foam glass tiles are placed between said at least two metal beams and held in compression of at least 1,000 to 5,000 psi by said one or more tension members.

As to **claims 14, 31, 53 and 65**, the resulting Grady, II assembly discloses a prestressed assembly having tension members comprised of tension bolts 90.

As to **claims 30 and 64**, to have formed the metal, force transmitting beams 84 of steel, thus realizing the advantages of such old and well known construction material,

would have constituted a further obvious expedient to one having ordinary skill in the art at the time the invention was made.

Claims 1, 5, 13, 14, 42-47, and 51-53 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ellis (U.S. Patent No. 3,430,397) in view of either Zeinetz (U.S. Patent No. 3,292,316) or Lagendijk (U.S. Patent No. 4,450,656) when considering either of Williams et al. (U.S. Patent No. 4,124,365) or Blaha (U.S. Patent No. 3,056,184) and further considering any of Jones et al. (U.S. Patent No. 3,459,565), Elmer et al. (U.S. Patent No. 3,592,619) and Ford (U.S. Patent No. 2,758,937).

Ellis discloses, Fig. 2, an arrangement, (column), of tile units 12 held together as by tension members 30 or 26/28/30. At least one tile is placed and held in compression by the tension bolts 30 or 26/28/30. Ellis does not present the tile units 12 as made of a foamed glass.

However, each of Zeinetz and Lagendijk teach utilization of foamed glass tiles or blocks within a tensioned structural arrangement. Fig. 11 of Zeinetz, for example, shows tension bolts 36, 39 holding foamed glass tiles, col. 4, lines 5-9, in place while Figs. 1, 2, and 6 of Lagendijk shows tension members 33, 34, 36, 45, etc. outside of the foamed glass units, holding the foamed glass units in place, col. 3, lines 30-60 and col. 4, lines 34-37.

And, each of Williams et al., as at col. 1, lines 35-43, and Blaha, as at col. 3, lines 24-35, teaches utilization of foamed glass tiles or blocks possessing a compressive

strength in excess of 1200 psi with Williams et al. teaching a compressive strength on the order of 5,000 to 8,000 psi.

Further, each of Jones et al., Elmer et al., and Ford disclose manufacture of foam glass components possessing various density including a density of from 20 to 60 pounds per cubic foot, with a pore size of less than 1mm including a pore size of from 0.1mm to 0.8mm or smaller, col. 5, lines 35-43, col. 7, line 51 and col. 8, lines 5-6 of Jones et al., col. 3, lines 20-29 and lines 65-67 of Elmer et al., and col. 1, lines 45-49 and lines 63-70 of Ford.

Therefore, to have provided the structural column of Ellis with foamed glass tile units possessing a compressive strength of from 1,000 to 10,000 psi and a pore size of less than 1.0mm including a pore size of from 0.3mm to 0.7mm, in place of the clay or cement units, thus realizing the advantages of such foamed glass units within a structural arrangement, (including for example insulation properties), would have been obvious to one having ordinary skill in the art at the time the invention was made as taught by either of Zeinetz and Lagendijk when considering either of Williams et al. and Blaha and further considering any of Jones et al., Elmer et al., and Ford, **(claims 1, 5, 13, 14, 42-47, and 51-53)**. Applying a pre-compressive force of from 1,000 to 5,000 psi to the resulting assembled foam glass units, thus affording as much recovery from the effects of a greater degree of overload, would have constituted a further obvious expedient to one having ordinary skill in the art at the time the invention was made, **(claims 1, 5, 13, 14, 42-47, and 51-53)**.

As to **claims 13 and 52** to have placed the tension bolts 30, or 26/28/30, under a tension so as to prestress the foamed glass tile units of the resulting Ellis assembly, thus forming a more strengthened arrangement, would have constituted a further obvious expedient to one having ordinary skill in the art at the time the invention was made with Grady, II showing the tension members outside of the foam glass tile units.

As to **claims 14 and 53**, Ellis discloses the tension members may comprise any suitable tension-applying device. Therefore, to have provided tension bolts in place of the straps shown by Ellis would have been a further obvious expedient to one having ordinary skill in the art at the time the invention was made.

Claims 23, 27, 29-31, 37, 54-59 and 63-66 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ellis (U.S. Patent No. 3,430,397) in view of either Zeinetz (U.S. Patent No. 3,292,316) or Lagendijk (U.S. Patent No. 4,450,656) when considering either of Williams et al. (U.S. Patent No. 4,124,365) or Blaha (U.S. Patent No. 3,056,184) and further considering any of Jones et al. (U.S. Patent No. 3,459,565), Elmer et al. (U.S. Patent No. 3,592,619) and Ford (U.S. Patent No. 2,758,937) as applied to claims 1-5, 13, 14, and 42-53 above, and further in view of Grady, II.

As to **claims 23, 27, 29, 54-59, and 63**, the resulting Ellis assembly discloses a prestressed assembly for use in buildings or other structures comprising: a plurality of prestressed foam glass tiles, having a prestressed compression of 1000 to 5,000 psi or greater; a metal beam 18/20, at the top thereof, and one or more tension members 30,

or 26/28/30, with the foam glass tiles are placed between said at least two metal beams and held in compression of at least 1,000 to 5,000 psi by the tension members. The resulting Ellis assembly does not disclose the tiles between two metal, force-transmitting beams.

However, Grady, II teaches applying metal force transmitting beams on either end of a structural arrangement so as to better distribute forces when tension is applied to the respective tension members 90.

Therefore, to have provided the resulting Ellis assembly with a second or lower metal force transmitting beam to cooperate with the upper force transmitting beam, thus effecting a more uniform distribution of forces when tension is applied to the respective tension members 30, or 26/28/30, would have been obvious to one having ordinary skill in the art at the time the invention was made as taught by Grady, II. To have placed the tension bolts 30, or 26/28/30, under a tension so as to prestress the foamed glass tile units of the resulting Ellis assembly, thus forming a more strengthened arrangement, would have constituted a further obvious expedient to one having ordinary skill in the art at the time the invention was made.

As to **claims 30 and 64**, to have formed the resulting upper and lower metal, force transmitting beams 18/20 of steel, thus realizing the advantages of such old and well known construction material, would have constituted a further obvious to one having ordinary skill in the art at the time the invention was made.

As to **claims 31 and 65**, Ellis discloses the tension members may comprise any suitable tension-applying device. Therefore, to have provided tension bolts in place of

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the straps shown by Ellis would have been a further obvious expedient to one having ordinary skill in the art at the time the invention was made.

As to **claims 37 and 66**, the resulting Ellis assembly discloses that the tension members are not within the foam glass tiles.

Response to Arguments

Applicant's arguments with respect to claims 1, 5, 13, 14, 23, 27, 29-31, 37, 42-47, 51-59 and 63-66 have been considered but are not persuasive. Reference is made to Examiner's response to arguments within the final rejection of August 24, 2007 as well as within the final rejection of September 11, 2006 and within the final rejection of March 03, 2006.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Michael Safavi whose telephone number is (571) 272-7046. The examiner can normally be reached on Mon.-Fri., 8:30-5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Lanna Mai can be reached on (571) 272-6867. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

/Michael Safavi/
Primary Examiner, Art Unit 3637

M. Safavi
July 06, 2008